

## Abstract

An optimal stiffness matching structure of planar bearing and axis of a rotary mechanism comprises a planar bearing and an axis. Mechanical characteristics of different materials are made use of to match the planar bearing and the axis.

- 5 The planar bearing is made of one of metal alloy and ceramic, while the axis is made of the other one of metal alloy and ceramic. Mechanical characteristics of different materials are matched to effectively eliminate surface scratches on the slide face caused by intrusion of minute particles. Moreover, the planar bearing and the axis of different stiffness are matched to have second polishing function,
- 10 letting the surface of the slide face having smaller stiffness have a roughness inversely proportional to time. Therefore, the time of operation of the slide face is effectively lengthened, the time of operation is greatly increased, and high-frequency noise owing to roughness is much reduced.